

## CLAIMS:

1. In a disc drive apparatus of a type comprising:  
radially displaceable scan means, comprising:
  - a sledge radially displaceable with respect to an apparatus frame;
  - a platform radially displaceable with respect to said sledge;a method for detecting vibrations, the method comprising the step of detecting a radial displacement of said platform with respect to said sledge.
2. A method according to claim 1, for use in a disc drive apparatus comprising an electromagnetic device in an actuator for displacing said platform with respect to said sledge, the method comprising the step of detecting a back-EMF in said electromagnetic device.
3. A method according to claim 1 or 2, for use in a disc drive apparatus comprising an optical system for scanning a disc, the optical system defining an optical path which is substantially fixed with respect to the sledge and comprising an optical element which is fixed with respect to the platform;  
the method comprising the step of detecting an optical read signal and deriving therefrom an X-displacement signal.
4. A method according to claim 2 or 3, wherein an actuator is activated such as to counteract a radial displacement of said platform with respect to said sledge;  
the method comprising the step of detecting an actuator control signal.
5. Method according to claim 3 or 4, further comprising the step of filtering said X-displacement signal or said actuator control signal, respectively, in association to a disc rotation frequency.
6. Method according to any of claims 3-5, further comprising the step of providing a rectified X-displacement signal or rectified actuator control signal, respectively,

indicating the amplitude of said X-displacement signal or said actuator control signal, respectively.

7. Method according to any of the previous claims, wherein the sledge is kept pressed against a frame or a stop fixed to said frame.

8. Method of setting a rotational speed of a disc drive apparatus, comprising the steps of:

selecting an initial rotational speed;

detecting any vibration with a method according to any of the previous claims;

increasing the rotational speed if the detected vibration is below an

acceptability level;

decreasing the rotational speed to a previous acceptable rotational speed if the detected vibration is above an acceptability level.

9. Disc drive apparatus, comprising:

rotating means for rotating a disc;

radially displaceable scan means, comprising:

- a sledge radially displaceable with respect to an apparatus frame;

- a platform radially displaceable with respect to said sledge;

said apparatus further comprising:

- vibration detection means for detecting vibrations caused by the rotating disc;

- said vibration detection means comprising radial displacement detection means for detecting a radial displacement of said platform with respect to said sledge.

10. Apparatus according to claim 9, further comprising:

an electro-motive platform actuator for displacing said platform with respect to said sledge;

wherein said radial displacement detection means are designed to detect a back-EMF in said electro-motive platform actuator.

11. Apparatus according to claim 9 or 10, further comprising:

an optical system for scanning a disc, the optical system defining an optical path which is substantially fixed with respect to the sledge and comprising an optical element which is fixed with respect to the platform;

wherein said radial displacement detection means are designed to detect an optical read signal and to derive therefrom an X-displacement signal.

12. Apparatus according to any of claims 9-11, further comprising:

an actuator for exerting a radial force on said platform with respect to said sledge;

a control unit generating an actuator control signal for activating said actuator such as to effectively counteract a radial displacement of said platform with respect to said sledge;

the method comprising the step of detecting said actuator control signal.

13. Apparatus according to any of claims 10-12, further comprising an adaptable filter means having an input receiving a detector output signal or said actuator control signal, respectively; the filter means further having a command input coupled to receive a signal representing the rotation frequency of said DISK, and having an output for providing a filtered detector signal.

14. Apparatus according to any of claims 10-13, further comprising a converter having an input coupled to receive a (filtered) detector signal or said actuator control signal, respectively, and having an output for providing a rectified detector signal.

15. Apparatus according to any of claims 9-14, further comprising a control unit for controlling said rotating means;

said control unit being responsive to said radial displacement detection means to reduce the speed of said rotating means when said radial displacement detection means indicates that said platform vibrates with respect to said sledge with too large an amplitude.

16. Apparatus according to any of the previous claims, wherein said control unit is designed, in an initializing phase, to set the rotation speed of the rotating means at an initial value;

to check the amplitude of any vibration of the platform with respect to the sledge;

to increase said rotational speed if the intensity of the detected vibration is below an acceptability level;

to decrease said rotational speed to a previous acceptable rotational speed if the intensity of the detected vibration is above an acceptability level;

to set the operational rotational speed of said rotating means to be equal to said previous acceptable rotational speed or, if no unacceptable vibration is detected, to be equal to the maximum rotational speed of the apparatus.

17. Apparatus according to claim 16, wherein said control unit is designed to control a radial sledge actuator such as to keep the sledge pressed firmly against the apparatus frame or a stop fixed to said frame.